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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,745	12/28/2001	Richard E. Smalley	11321-P012USD3	2473

7590

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EXAMINER

MAPLES, JOHN S

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

10/034,745

Applicant(s)

SMALLEY ET AL.

Examin r

John S. Maples

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 31-33 and 163-188 ~~is/are~~ are pending in the application.
- 4a) Of the above claim(s) 31-33, 163-165, 170, 171, 175, 176 and 181-188 ~~is/are~~ are withdrawn from consideration.
- 5) ☒ Claim(s) 177-180 ~~is/are~~ are allowed.
- 6) ☒ Claim(s) 166, 167 and 172 ~~is/are~~ are rejected.
- 7) ☒ Claim(s) 168, 169, 173 and 174 ~~is/are~~ are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☒ Other: *Reasons for Allowance*.

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1. Applicant's election with traverse of Group IV in Paper No. 9 is acknowledged. It is noted that in view of applicant's arguments and discussion, claims 177-180 have been combined with the Group IV claims 166-169 and 172-174 because of the present specification reciting the first mentioned use of the membrane being in batteries.

The traversal is on the grounds that there is not a serious burden on the examiner to examine the different groups. Applicant has set forth many different reasons to support his assertion. These reasons are not found persuasive because of the different groupings listed by the examiner and the reasons supporting such groupings in the restriction requirement and the following arguments.

Applicant states that claims 31-33 should not be classified in Class 427. The examiner respectfully disagrees. Claim 31 recites a coating step and so these claims are proper to be classified in the coating class 427.

Applicant further argues that Group IV should be grouped with Groups I-III. Groups I and II are drawn to methods while Group IV is a product. Group I includes many steps and materials not envisioned by Groups II-IV. Group II includes the step of forming an array from a plurality of arrays, again a step not part of any of Groups I or III-IV. Group III could be made by either of the different methods of Group I or II, thus proving that this product could be made by two different materially methods and is properly restrictable.

Applicant has noted that some of the groups only contain 1 claim. This is proper if the claims include patentably distinct subject matter. Such is the case in this application. Groups IX-XI all comprise different products and are thus distinct, even though these groups include only one claim each.

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With regard to the remainder of the battery claims, applicant has argued that because these groups are classified in subclasses so near each other, they should be examined together. The opposite is true. In view of the fact that the subject matter is classified in different subclasses, this requires searching in each of these areas, thus placing undue burden upon the examiner to search each of these subclasses.

The requirement is still deemed proper and is therefore made FINAL.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 166, 167 and 172 are rejected under 35 U.S.C. 102(b) as being anticipated by either the Ando-“Carbon Nanotubes” Article, Reference ACA-Li et al., or Reference AEA-Thess et al.

Reference is made to Figure 5B of Ando for the disclosure of the parallel carbon conductive nanotubes.

In the Li et al. article, Figure 4 discloses the parallel oriented conductive nanotubes.

The Thess article depicts in Figure 1 conductive nanotubes that are single walled and parallel to each other.

It is inherent in the above articles that the nanotubes are nanoporous because of the spacing between the tubes.

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4. Claims 166, 167 and 172 are rejected under 35 U.S.C. 102(e) as being anticipated by either Ebbesen et al.-US 5,641,466 (Ebbesen) or Smalley et al.-US 6,183,714 (Smalley).

Figure 5 of Ebbesen depicts the parallel single-walled conductive carbon nanotubes.

With regard to Smalley, reference is made to Figures 2B-2E for the conductive parallel single-walled carbon nanotubes.

It is inherent that the nanotubes in both Ebbesen and Smalley are nanoporous because of the spacing between the tubes.

5. The following is an examiner's statement of reasons for allowance: none of the prior art of record discloses a photoactive molecule attached to a nanoporous membrane comprising substantially parallel single-walled nanotubes. The art also does not teach a dopant physically entrapped in a membrane between single-walled carbon nanotubes. A battery comprising the above membrane is also not taught by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

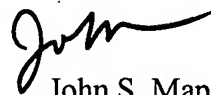
6. The Title should be changed to conform with the claimed subject matter.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Maples whose telephone number is 571-272-1287. The examiner can normally be reached on Monday-Thursday from 6:15-3:45.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



John S. Maples  
Primary Examiner  
Art Unit 1745

JSM/1-12-2004